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EXAMINER

MARCHESCHI, MICHAEL A

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 04/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,206

Applicant(s)

SMALL ET AL.

Examiner

Michael A Marcheschi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-75 is/are pending in the application.
- 4a) Of the above claim(s) 36-75 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☒ Claim(s) 16 and 32 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,4.
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 5.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims ~~1-35~~³⁰⁷, drawn to a polishing composition, classified in class 51, subclass
- II. Claims 36-75, drawn to a polishing method and resulting substrate, classified in class 438, subclass ~~89~~⁶⁹².

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the process for using the product (polishing method) as claimed can be practiced with another materially different product, such as, a polishing composition that does not require periodic acid. The substrate claims are incorporated into group II because they are dependent on the method of claim 36

Because these inventions are distinct for the reasons given above and (1) have acquired a separate status in the art as shown by their different classification, (2) have acquired a separate status in the art because of their recognized divergent subject matter, and (3) the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with K. Alison de Runtz on 4/24/03 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-35. Affirmation

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of this election must be made by applicant in replying to this Office action. Claims 36-75 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

The papers filed on 4/29/02 have not been made part of the permanent records of the United States Patent and Trademark Office (Office) for this application (37 CFR 1.52(a)) because of damage from the United States Postal Service irradiation process. **The above-identified papers, however, were not so damaged as to preclude the USPTO from making a legible copy of such papers. Therefore, the Office has made a copy of these papers, substituted them for the originals in the file, and stamped that copy:**

**COPY OF PAPERS
ORIGINALLY FILED**

If applicant wants to review the accuracy of the Office's copy of such papers, applicant may either inspect the application (37 CFR 1.14(d)) or may request a copy of the Office's records of such papers (*i.e.*, a copy of the copy made by the Office) from the Office of Public Records for the fee specified in 37 CFR 1.19(b)(4). Please do **not** call the Technology Center's Customer Service Center to inquiry about the completeness or accuracy of Office's copy of the above-identified papers, as the Technology Center's Customer Service Center will **not** be able to provide this service.

If applicant does not consider the Office's copy of such papers to be accurate, applicant must provide a copy of the above-identified papers (except for any U.S. or foreign patent documents submitted with the above-identified papers) with a statement that such copy is a complete and accurate copy of the originally submitted documents. If applicant provides such a copy of the above-identified papers and statement within **THREE MONTHS** of the mail date of this Office

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action, the Office will add the original mailroom date and use the copy provided by applicant as the permanent Office record of the above-identified papers in place of the copy made by the Office. Otherwise, the Office's copy will be used as the permanent Office record of the above-identified papers (*i.e.*, the Office will use the copy of the above-identified papers made by the Office for examination and all other purposes). This three-month period is not extendable.

The abstract of the disclosure is objected to because it is **not** limited to a single paragraph. Correction is required. See MPEP § 608.01(b).

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words.

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because Non-initialed and/or non-dated alterations have been made to the oath or declaration by the second inventor. See 37 CFR 1.52(c).

The disclosure is objected to because of the following informalities:

The specification is objected to because on page 6, in section [0020], applicants define Table I and on page 22, in section [0070], applicants define Table 1. The characters used to define these two distinct Tables are I and 1. Since these two characters look similar, they might add confusion between these two tables and the description of said tables. It is therefore suggested that another character be used to define Table 1 and the description of said table.

The specification is also objected to because on page 32, last line, applicants refer to table XV but table XV is not defined. Is this the table on page 33? If so, a heading should be defined.

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The specification is also objected to because it does not set forth what table XVII defines (i.e. on page 36 or page 37).

Appropriate correction is required.

Claims 1-18 and 33-35 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 33 are indefinite as to the phrase "substantially planar" because the examiner is unclear as to what "substantially" encompasses when used in the context of the above phrase. Is it planar or not or to what extent is it non-planar? In view of this, the scope of the claims is unclear.

Claim 33 is also indefinite as to the phrase "composition is sufficient to render the substrate surface" because this does not define the claim in a clear and concise manner. How can the composition be sufficient for this, especially since claim 19 defines the amounts required? Since the amounts may be sufficient to accomplish this and claim 19 defines the amounts, the claimed characteristic is a property of the composition when used for the claimed substrate. To overcome this rejection, the above phrase should be changed to "**composition renders the substrate surface**".

Claim 34 is also indefinite as to the phrase "composition is sufficient to provide the substrate surface" because this does not define the claim in a clear and concise manner. How can the composition be sufficient for this, especially since claim 19 defines the amounts required? Since the amounts may be sufficient to accomplish this and claim 19 defines the amounts, the

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claimed characteristic is a property of the composition when used for the claimed substrate. To overcome this rejection, the above phrase should be changed to "composition provides the substrate surface".

Claim 35 is also indefinite as to the phrase "composition is sufficient to provide the substrate surface" because this does not define the claim in a clear and concise manner. How can the composition be sufficient for this, especially since claim 19 defines the amounts required? Since the amounts may be sufficient to accomplish this and claim 19 defines the amounts, the claimed characteristic is a property of the composition when used for the claimed substrate. To overcome this rejection, the above phrase should be changed to "composition provides the substrate surface".

Claims 17 and 34 are indefinite as to the phrase "the substrate surface at a WWNU" because the examiner is unclear as to if this is define the function of the composition. If so, the above phrase does not clearly define this. To overcome this rejection, the above phrase should be changed to "the substrate surface with a WWNU".

Claims 18 and 35 are indefinite as to the phrase "the substrate surface at a WTWNU" because the examiner is unclear as to if this is define the function of the composition. If so, the above phrase does not clearly define this. To overcome this rejection, the above phrase should be changed to "the substrate surface with a WTWNU".

The other claims are indefinite because they depend on indefinite claims.

Claims 16 and 32 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to

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cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The limitation of these claims does not further define the polishing composition in terms of its components and/or characteristics, thus not further limiting the composition.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4-18 are rejected under 35 U.S.C. 102(a or e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over either (1) Shemo et al. or (2) Fang (227).

Shemo et al. teach in the abstract, column 4, line 44-column 7, line 25 and the claims, a polishing composition, having the claimed pH, which comprises an abrasive and periodic acid.

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Various other components can be used (i.e. a pH adjustor, a surfactant and organic acid, etc.).

The amounts for the abrasive and periodic acid are defined.

Fang teaches in column 2, line 17-column 5, line 65 and the claims, a polishing composition, having the claimed pH, which comprises an abrasive and periodic acid. Various other components can be used (i.e. a pH adjustor, a surfactant and organic acid, etc.). The amounts for the abrasive and periodic acid are defined.

The references teach polishing compositions that comprise all of the claimed components thus the claimed composition is anticipated by the references. The references define amounts for the components and it is the examiners position that the combined amounts defined by the references will inherently render a substrate substantially planar. In the alternative, no patentable distinction is seen to exist between the reference compositions and the claimed composition in the absence of any evidence showing the contrary. With respect to the characteristics of claims 17 and 18, since the compositions are the same, these characteristics are inherent (102) or expected and therefore obvious (103) because the same polishing composition is expected to provide the same polishing characteristics to a substrate upon polishing. Finally, although these references are not directed to polishing a noble metal, this is the intended use of the claimed composition which provides no patentable weight to a composition claim.

Claims 2-3 and 19-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over either (1) Shemo et al. or (2) Fang (227).

The references teach amounts for the periodic acid and it is the examiners position that when said amounts are calculated in terms of moles/kg, said amounts will encompasses the

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claimed amounts. If applicants wish to argue the claimed amounts, burden is upon applicants to show the contrary to the above statement (i.e. show that the reference ranges are not within the range of the claimed amounts). The references define amounts for the components and it is the examiners position that the combined amounts defined by the references will render a substrate substantially planar, thus making this limitation obvious. In view of this, no patentable distinction is seen to exist between the reference compositions and the claimed composition in the absence of any evidence showing the contrary. With respect to the characteristic of claims 34 and 35, since the compositions are the same, these characteristics are expected and therefore obvious because the same polishing composition is expected to provide the same polishing characteristics to a substrate upon polishing. Finally, although these references are not directed to polishing a noble metal, this is the intended use of the claimed composition which provides no patentable weight to a composition claim.

Claims 1, 4, 5 and 11-18 are rejected under 35 U.S.C. 102(a or e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Brusic et al.

Brusic et al. teach in the abstract and column 3, line 36-column 6, line 45, a polishing composition, having the claimed pH, which comprises an abrasive and periodic acid. Various other components can be used (i.e. an organic acid, etc.). The amounts for the abrasive and periodic acid are defined.

The reference teaches a polishing composition that comprise all of the claimed components thus the claimed composition is anticipated by the reference. The reference defines amounts for the components and it is the examiners position that the combined amounts defined

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by the reference will inherently render a substrate substantially planar. In the alternative, no patentable distinction is seen to exist between the reference composition and the claimed composition in the absence of any evidence showing the contrary. With respect to the characteristics of claims 17 and 18, since the composition is the same, these characteristics are inherent (102) or expected and therefore obvious (103) because the same polishing composition is expected to provide the same polishing characteristics to a substrate upon polishing.

Claims 2-3, 6-10 and 19-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brusic et al. in view of Fang (227).

The primary reference teaches amounts for the periodic acid and it is the examiners position that when said amounts are calculated in terms of moles/kg, said amounts will encompass the claimed amounts. If applicants wish to argue the claimed amounts, burden is upon applicants to show the contrary to the above statement (i.e. show that the reference range is not within the range of the claimed amounts). This reference also defines amounts for the components and it is the examiners position that the combined amounts defined by the reference will render a substrate substantially planar, thus making this limitation obvious. In view of this, no patentable distinction is seen to exist between the reference composition and the claimed composition in the absence of any evidence showing the contrary. With respect to the characteristic of claims 34 and 35, since the compositions are the same, these characteristics are expected and therefore obvious because the same polishing composition is expected to provide the same polishing characteristics to a substrate upon polishing. Finally, the primary reference teaches a pH of the composition and one skilled in the art would have found the adjustment of

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said pH obvious, which is clearly shown by Fang, in order to produce a polishing composition having a specific pH. In other words, the use of a pH adjustor is well within the level of ordinary skill in order to produce a composition having the desired pH.

Claims 1, 4, 5 and 11-18 are rejected under 35 U.S.C. 102(a or e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Moeggenborg et al.

Moeggenborg et al. teach in the abstract and sections [0009]-[column 3, line 36-column 6, line 45, a polishing composition, having the claimed pH, which comprises an abrasive and periodic acid. It is shown that a combination of abrasives can be used thus reading on the claimed suspension agent (i.e. another abrasive). The amounts for the abrasive and periodic acid are defined.

The reference teaches a polishing composition that comprise all of the claimed components thus the claimed composition is anticipated by the reference. The reference defines amounts for the components and it is the examiners position that the combined amounts defined by the reference will inherently render a substrate substantially planar. In the alternative, no patentable distinction is seen to exist between the reference composition and the claimed composition in the absence of any evidence showing the contrary. With respect to the characteristics of claims 17 and 18, since the composition is the same, these characteristics are inherent (102) or expected and therefore obvious (103) because the same polishing composition is expected to provide the same polishing characteristics to a substrate upon polishing.

Claims 2-3, 6-12 and 19-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moeggenborg et al. in view of Fang (227) and Dirksen et al.

Dirksen et al. teach in section [0008] and section [0020] that surfactants and organic acids are well known conventional additives to be added to noble metal polishing compositions.

The primary reference teaches amounts for the periodic acid and it is the examiners position that when said amounts are calculated in terms of moles/kg, said amounts will encompass the claimed amounts. If applicants wish to argue the claimed amounts, burden is upon applicants to show the contrary to the above statement (i.e. show that the reference range is not within the range of the claimed amounts). This reference also defines amounts for the components and it is the examiners position that the combined amounts defined by the reference will render a substrate substantially planar, thus making this limitation obvious. In view of this, no patentable distinction is seen to exist between the reference composition and the claimed composition in the absence of any evidence showing the contrary. With respect to the characteristic of claims 34 and 35, since the compositions are the same, these characteristics are expected and therefore obvious because the same polishing composition is expected to provide the same polishing characteristics to a substrate upon polishing. Although the primary reference does not literally define the pH, this does not preclude the material of the reference from having this characteristic. It is therefore the examiners position that since the reference fails to mention any specific pH (criticality), this (the absence of any such limitation) constitutes a broad teaching of pH values, as long as the final polishing composition is obtained. In view of this, it can be reasonably interpreted that the claimed pH is encompassed by the broad teachings according to this reference in the absence of any evidence showing the contrary (criticality). This is apparent

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because all polishing compositions have a pH. With the pH being obvious, one skilled in the art would have found the adjustment of said pH obvious, which is clearly shown by Fang, in order to produce a polishing composition having a specific pH. In other words, the use of a pH adjustor is well within the level of ordinary skill in order to produce a composition having the desired pH. Finally, it is the examiners position that use of conventional polishing additives, such as a surfactant and an organic acid, would have been well within the level of ordinary skill in the art. These conventional additives for noble metal polishing compositions are clearly shown by Dirksen et al.

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

"A reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings. *In re Opprecht* 12 USPQ 2d 1235, 1236 (CAFC 1989); *In re Bode* USPQ 12; *In re Lamberti* 192 USPQ 278; *In re Bozek* 163 USPQ 545, 549 (CCPA 1969); *In re Van Mater* 144 USPQ 421; *In re Jacoby* 135 USPQ 317; *In re LeGrice* 133 USPQ 365; *In re Preda* 159 USPQ 342 (CCPA 1968)". In addition, "A reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments" See *In re Van Marter*, 144 USPQ 421.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of

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obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976)".

Evidence of unexpected results must be clear and convincing. *In re Lohr* 137 USPQ 548.
Evidence of unexpected results must be commensurate in scope with the subject matter claimed.
In re Linder 173 USPQ 356.

The additional references cited on the 1449 have been reviewed by the examiner and are considered to be art of interest since they are cumulative to or less than the art relied upon in the above rejections.

Any foreign language documents submitted by applicant has been considered to the extent of the short explanation of significance, English abstract or English equivalent, if appropriate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Marcheschi whose telephone number is (703) 308-3815. The examiner can be normally be reached on Monday through Thursday between the hours of 8:30-6:00 and every other Friday between the hours of 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, Mark L. Bell, can be reached at (703) 308-3823.

Amendments can also be sent by fax to the numbers set forth below:

For after final amendments, the fax number is (703) 872-9311;

For non-final amendments, the fax number is 703 872-9310.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

Michael Marcheschi

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4/03

MICHAEL MARCHESCHI
PRIMARY EXAMINER